PATENT CLAIMS

1. Method for increasing the adsorption of gas into water which is gassed at least in a gassing chamber, characterized in that the gas/water mixture, after leaving the gassing chamber, is guided through at least one gassing device located downstream of the gassing chamber, in which the gas/water mixture is being thoroughly mixed.

2. Method according to claim 1, characterized in that a carbonator chamber (48) and an inline carbonator (26) are utilized for the gassing with CO_2.

3. Method according to one of claims 1 or 2, characterized in that the gas/water mixture is guided across granulate inside the inline carbonator.

4. Method according to one of claims 1 to 3, characterized in that the granulate is filled into a hollow body surrounding the inline carbonator in the form of flowable bulk material.

5. Method according to one of claims 1 to 4, characterized in that an additional amount of gas is introduced into the gas/water mixture upon leaving the gassing chamber (48) and before entry into the inline carbonator (26).

6. Method according to one of claims 1 to 5, characterized in that in the inline carbonator (26) a pressure is maintained suitable for drawing a finely beaded gas/water mixture from a tap.

7. Method according to one of claims 1 to 6, characterized in that the gas/water mixture undergoes cooling prior to entry into the inline carbonator (26).

8. Method according to one of claims 1 to 7, characterized in that the liquid impregnated in the inline carbonator (26) is tapped from certain tapping points (32).

9. Method according to one of claims 1 to 7, characterized in that the carbonator chamber (48) and the inline carbonator are utilized for industrial filling of refreshment beverages.

10. Method according to one of claims 1 to 9, characterized in that the inline carbonator (26) is integrated into a cooler.

11. Method according to one of claims 1 to 10, characterized in that the carbonator chamber (48) has at least one location for inputting liquid into the carbonator chamber (48).

12. Method according to one of claims 1 to 11, characterized in that there is at least one input opening at the inline carbonator (26) for inputting liquid into the inline carbonator.

13. Method according to one of claims 1 to 12, characterized in that inputting the liquid and the gas into the inline carbonator (26) is carried out in mutual dependence on the pressure of each the gas and the liquid.

14. Method according to one of claims 1 to 13, characterized in that a tapping system including a gassing chamber can be retrofitted with an inline carbonator (26).

15. Method according to one of claims 1 to 14, characterized in that carbonation in the inline carbonator takes place only upon tapping of arbonized liquids.

16. Method according to one of claims 1 to 15, characterized in that the hollow body of the inline carbonator (26) comprises three interconnected layers.

17. Method according to one of claims 1 to 16, characterized in that the innermost layer of the hollow body of the inline carbonator (26) is from plastic and covered by a middle layer from aluminum which is provided with an outer layer of plastic.

18. Method according to one of claims 1 to 17, characterized in that through integration of an inline carbonator (26), formation of foam is suppressed when tapping soft drinks.

19. Method according to one of claims 1 to 18, characterized in that prior to introducing carbonation in the carbonator chamber (48), the pressure of the liquid entering the carbonator chamber (48) is kept constant by means of a pressure elevator pump.

20. Method according to one of claims 1 to 19, characterized in that the carbonator chamber (48) and the recirculation carbonator (73) are combined into a post-mix system.

21. Method according to one of claims 1 to 20, characterized in that in one recirculation carbonator (73) two inline carbonators (26) are mounted parallel in a circular line.

22. Method according to one of claims 1 to 19, characterized in that a post-mix system for refreshment beverages is provided with an inline carbonator (26) in an output line (51) of a shock carbonator.

23. Method according to one of claims 1 to 21, characterized in that two inline carbonators (26) are mounted parallel to each other in an output line (51) of a shock carbonator.

24. Method according to one of claims 1 to 23, characterized in that in a shock carbonator (80) the gas/water mixture under pressure form the carbonator chamber (48) is flowing through the inline carbonator (26) received within the carbonator chamber (56) directly following the cooling system.

25. Method according to claim 24, characterized in that the gas/water mixture under pressure from the carbonator chamber (48) is passing through two parallel mounted inline carbonators (26) received inside the water basin (56).

26. Method according to claim 25, characterized in that each of the at least two inline carbonators (26) through which the gas/water mixture flows are provided with a separate line for the gas/ water mixture under pressure from the carbonator chamber (48).

27. Method according to one of claims 20 or 21, characterized in that in a recirculation carbonator (73), the inline carbonator (26) downstream of the carbonator chamber (48) is integrated into the circular line within the water basin (56).

28. Method according to claim 27, characterized in that in a recirculation carbonator (73) the gas/water mixture under pressure from the carbonator chamber (48) is passing through two inline carbonators (26) mounted parallel to each other within the water basin (56).

29. Device for increasing adsorption of gas into water which is gassed at least in a carbonator chamber, characterized in that an inline carbonator is

installed downstream of the carbonator chamber and at an exit opening for the gassed water at the carbonator chamber, wherein the water is thoroughly mixed within the inline carbonator.

30. Device according to claim 29, characterized in that the gassing chamber is constructed as a carbonator chamber (48) and the inline gassing device is constructed as an inline carbonator (26) for gassing the water with CO_2.

31. Device according to claim 29 or 30, characterized in that the inline carbonator (26) is filled with a granulate.

32. Device according to one of claims 29 to 31, characterized in that the carbonator chamber (48) is disposed within a recirculation carbonator (73).

33. Device according to one of claims 29 to 31, characterized in that the carbonator chamber (48) is disposed within a shock carbonator (80)

34. Device according to one of claims 29 to 33, characterized in that the inline carbonator (26) is disposed outside a housing which houses the carbonator chamber (48) and a cooling system (48, 49).

35. Device according to claims 29 to 33, characterized in that the inline carbonators (26) interior of a housing which houses the carbonator chamber (48) and the inline carbonator (26).

36. Device according to one of claims 29 to 30, characterized in that between the carbonator chamber (48) and the inline carbonator (26) a cooling system (49) is provided fro flow-through of the gas/water mixture which is under pressure from the carbonator chamber (48).

37. Device according to claims 29 to 33, characterized in that in a recirculation carbonator (3) the inline carbonator (26) is disposed in a branch of a circulation line, which is under elevated pressure generated by a displacement pump (53) as compared to the circulation line.

38. Device according to claims 33 to 36, characterized in that in a shock carbonator (80) the inline carbonator (26) is provided with an exit line (29) of the carbonator chamber (48) connected to tapping points.

39. Device according to one of the claims 29-38, characterized in that the inline carbonator (26) comprises a granulate filled hollow body whose opposite openings are each closed by means of a flange (63) and provided with a bore (66) which each extends in the direction of an inner space that is surrounded by a hollow body and wherein at a side facing away from the inner space is surrounded with cylindrical shaped slide-on surfaces (64, 65), each of the flange (66) facing inner slide-on surface (63) has a larger diameter as compared to the outer slide-on surface facing away from the flange (63).

40. Method for carrying out an additional post carbonation or impregnation by means of one or more hollow body inline impregnator or carbonator systems filled with granulate (1) (2) (7) (13) and to provide tapping valves or (faucets) for the so post-impregnated liquids which may be cooled, and for producing and tapping refreshment beverages via at least one hollow body inline impregnation system filled preferably with granulate (10 92) (7) (13) and via the hollow body Inline carbonators (1) (2) (7) (13) supply impregnated liquids to the tap or tapping faucets.

41. Method according to claims 1-40 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that already impregnated liquids can be post-impregnated or post-carbonated through the hollow body inline

impregnation system (1) (2) (7) (13) without supplying additional gas or liquid.

42. Method according to claims 1-41 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that several hollow body inline impregnation systems can be in operation simultaneously.

43. Method according to claims 1-42 for a hollow body inline impregnation systems (1) (2) (7) (13) characterized by using also refrigerated liquids.

44. Method according to claims 1-43 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that one or more hollow body inline impregnator systems supply refrigerated or non-refrigerated impregnated liquids to at least one tap for producing post-carbonated or impregnated liquids.

45. Method according to claims 1-44 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that impregnation is carried out independently by means of the hollow body inline impregnation system (1) (2) (7) (13) under addition of refrigerated and non-refrigerated gases and liquids.

46. Method according to claims 1-45 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that the system can be of different construction and assembly.

47. Method according to claims 1-46 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that one or more hollow body inline impregnation systems (1) (2) (7) (13) can be used for industrial filling of refreshment beverages.

48. Method according to claims 1-47 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that the impregnated or carbonated liquids can be drawn from the tap with fine beads.

49. Method according to claims 1-48 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that hollow body inline impregnation system (1) (2) (7) (13) can be utilized integrated directly into a refrigeration machine of any type.

50. Method according to claims 1-49 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that at least one liquid supply is provided.

51. Method according to claims 1-50 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that at least one liquid and gas supply is provided for the hollow body inline impregnation system (1) (2) (7) (13).

52. Method according to claims 1-51 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that the existing impregnation or carbonator system can be retrofitted or added on to with at least one hollow body inline impregnation system (1) (2) (7) (13).

53. Method according to claims 1-52 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that carbonating or impregnating takes place preferably only when tapping from the tap or taps and thus carbonation or impregnation takes pace in a continues operation.

54. Method according to claims 1-53 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that at least one liquid supply line connector and at least one liquid exit line for the refrigerated or non-

refrigerated liquids is provided, wherein the hollow body inline impregnator preferably is made with three–layers, with an inner layer of plastic,preferably polyethylene, an intermediate layer from aluminum and the third layer preferably from plastic or other suitable materials.

55. Method according to claims 1-54 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that the formation of foam is suppressed when tapping the soft drinks from the tap or taps.

56. Method according to claims 1-55 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that prior to impregnation or carbonation, the liquid pressure is preferably kept constant by using at least one pressure elevating pump.